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PATENT  
Application Serial No. 10/812,038  
Attorney Ref. No. 059US2

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re: Patent Application of )  
Michael F. Hoey, et al. ) Group Art Unit: 3736  
App. Ser. No. 10/812,038 )  
Filed: March 29, 2004 ) Examiner: Charles A. Marmor, II  
For: TISSUE DISCRIMINATION AND )  
APPLICATIONS IN MEDICAL )  
PROCEDURES )

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Mail Stop Petition, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on August 3, 2005:

Signature: \_\_\_\_\_  
Jonathan D. Spangler

**PETITION TO WITHDRAW HOLDING OF ABANDONMENT UNDER 37 C.F.R. 1.181**  
**OR, IN THE ALTERNATIVE,**  
**PETITION FOR REVIVAL OF AN APPLICATION FOR PATENT ABANDONED**  
**UNINTENTIONALLY UNDER 37 CFR 1.137(b)**

Mail Stop Petition  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

In response to Notice of Abandonment mailed by the US Patent and Trademark Office on May 4, 2005, Applicant hereby respectfully petitions that the Holding of Abandonment be withdrawn, or in the alternative (in the event the Holding of Abandonment is not withdrawn),

08/09/2005 TBESHAH1 00000014 502040 10812038

01 FC:2453 750.00 DA

that the application be revived for unintentional abandonment. In support, Applicant respectfully submits the following:

- (1) Exhibit A: A copy of the Return Receipt Postcard submitted with Applicant's response to the Office Action, date stamped by the USPTO (1 page); and
- (2) Exhibit B: A copy of Applicant's response to the Office Action (19 pages).

**I. Petition to Withdraw Holding of Abandonment Under 37 CFR 1.181**

The Holding of Abandonment was based on an alleged failure to timely reply to the Office Action mailed September 21, 2004 ("Office Action"). Specifically, the Examiner indicated that no reply had been received. Attached is a copy of the Return Receipt Postcard (Exhibit A) submitted with Applicant's timely response to the Office Action and date-stamped March 28, 2005 by the USPTO. According to MPEP § 503, "[a] postcard receipt which itemizes and properly identifies the items which are being filed serves as a *prima facie* evidence of receipt in the USPTO of all the items listed thereon on the date stamped thereon by the USPTO." Furthermore, the certificates of mailing associated with the Applicant's response indicate that the response was mailed on March 21, 2005, which is within 6 months of the original mailing of the Office Action (A Petition for Extension of Time for 3 months was included in Applicant's response). Thus, the Applicant asserts that the evidence presented indicates that a response to the Office Action was timely filed and received by the USPTO.

The Notice of Abandonment was mailed on May 4, 2005. The Applicant understands that, according to 37 CFR 1.181(f), any petition not filed within 2 months of the mail date of the action complained of may be dismissed as untimely. However, MPEP § 711.03(c)(I)(C) provides that “rather than dismiss as an untimely petition to withdraw the holding of abandonment under 37 CFR 1.181(f), the Office may require a terminal disclaimer as a condition of granting an untimely petition to withdraw the holding of abandonment.” For utility applications filed after May 29, 2000, a terminal disclaimer is not required but rather the term of the patent is reduced automatically under the provisions of 37 CFR 1.704(c)(4). The Applicant concedes that the present Petition to Withdraw Holding of Abandonment is being filed outside of the 2-month window, and thus may be considered untimely. However, Applicant hereby respectfully requests that the Commissioner not dismiss this petition as untimely, but rather impose a patent term adjustment as required by 37 CFR 1.704(c)(4) as a condition of granting this petition.

Based on the foregoing, Applicant respectfully requests that the Commissioner grant this Petition for Withdrawal of the Holding of Abandonment on Patent Application 10/812,038 (059US2) such that prosecution on the merits may be re-opened and continued.

If there are any fees or charges associated with this Petition for Withdrawal of the Holding of Abandonment, the Applicant hereby requests that any such fees or charges be made to Deposit Account No.: 50-2040 for Customer No.: 30,328.

**II. Petition for Revival of an Application Abandoned Unintentionally Under 37 CFR 1.137(b)**

In the event the Commissioner declines to grant Applicant's Petition to Withdraw Holding of Abandonment under 37 CFR 1.181 set forth above, the Applicant hereby petitions in the alternative and submits in support a Petition for Revival of an Application Abandoned Unintentionally Under 37 CFR 1.137(b) via the enclosed PTO/SB/64. Applicant respectfully requests that the Commissioner grant this Petition for Revival of an Application Abandoned Unintentionally under 37 CFR 1.137(b) such that prosecution on the merits may be re-opened and continued.

In the event that Applicant's Petition for Withdrawal of the Holding of Abandonment is declined and the Petition for Revival of an Application Abandoned Unintentionally is granted, Applicant hereby request that the Petition fee of \$750 and any other fees or charges be made to Deposit Account No.: 50-2040 for Customer No.: 30,328.

**III. Conclusion**

In the event that there are any questions concerning this submission or the application in general, the Examiner is cordially invited to telephone the undersigned attorney so that prosecution may be expedited.

Respectfully submitted,  
NUVASIVE, INC.

By: 

Jonathan Spangler, Esq.  
Registration No. 40,182

4545 Towne Centre Court  
San Diego, CA 92121  
Tel.: (858) 243-0029

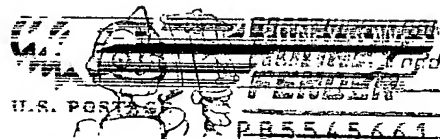
August 3, 2005

EXHIBIT "A"

FIP 4/6/05~

Please date stamp this postcard evidencing receipt by the US  
Patent and Trademark Office of the following materials  
deposited in First Class Mail on March 21, 2005 regarding App.  
Ser. No. 10/812,038 (059US2):

1. Transmittal Form (1 pg);
2. Petition for Extension of Time (1 pg & 1 copy);
3. Responsive Amendment (14 pgs);
4. Copy of Declaration from Parent Application (1 pg);
5. Copy of Inventor Information Page from Parent Application;  
and
6. Return Postcard (1 pg).



Jonathan Spangler, Esq.  
Chief Patent Counsel  
NuVasive, Inc.  
4545 Towne Center Court  
San Diego, CA 92121

12141900



EXHIBIT "B"

Fax Central

002/004

+18582717101

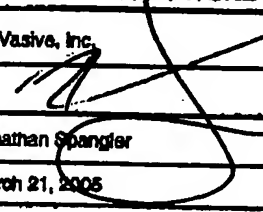
T-228 P.002/004 F-845

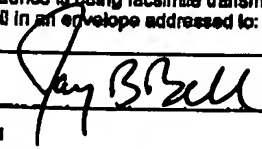
PTO/SB/21 (09-04)

Approved for use through 07/31/2008. OMB 0851-0031  
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

<b>TRANSMITTAL FORM</b>  (to be used for all correspondence after initial filing)	Application Number	10/812,038	
	Filing Date	March 29, 2004	
	First Named Inventor	Michael F. Hoey	
	Art Unit	3738	
	Examiner Name	Charles Alan Marmor, II	
Total Number of Pages in This Submission	17	Attorney Docket Number	059U32

ENCLOSURES (Check all that apply)		
<input type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input checked="" type="checkbox"/> Amendment/Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input checked="" type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement  <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Reply to Missing Parts/ Incomplete Application <input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation <input type="checkbox"/> Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____ <input type="checkbox"/> Landscape Table on CD	<input type="checkbox"/> After Allowance Communication to TC <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): 1. Copy of Declaration 2. Copy of Inventor Data Sheet 3. Return Postcard
Remarks		
SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT		
Firm Name	NuVasive, Inc.	
Signature		
Printed name	Jonathan Spangler	
Date	March 21, 2005	Reg. No. 40,182

CERTIFICATE OF TRANSMISSION/MAILING	
I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below:	
Signature	
Typed or printed name	Jay Bell
Date	March 21, 2005

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/SB/22 (12-04)

Approved for use through 07/31/2006. OMB 0651-0031  
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

<b>PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a)</b> <b>FY 2005</b> <i>(Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).)</i>		Docket Number (Optional) <b>059 US2</b>	
Application Number <b>10/812,938</b>		Filed <b>MARCH 29, 2004</b>	
<b>For TISSUE DISCRIMINATION AND APPLICATIONS IN MEDICAL PROCEDURES</b>			
Art Unit <b>3736</b>		Examiner <b>CHARLES ALAN MARMOR II</b>	

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application.

The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):

	Fee	Small Entity Fee	
<input type="checkbox"/> One month (37 CFR 1.17(a)(1))	\$120	\$60	\$ _____
<input type="checkbox"/> Two months (37 CFR 1.17(a)(2))	\$450	\$225	\$ _____
<input checked="" type="checkbox"/> Three months (37 CFR 1.17(a)(3))	\$1020	\$510	\$ <b>510.00</b>
<input type="checkbox"/> Four months (37 CFR 1.17(a)(4))	\$1590	\$795	\$ _____
<input type="checkbox"/> Five months (37 CFR 1.17(a)(5))	\$2160	\$1080	\$ _____

☒ Applicant claims small entity status. See 37 CFR 1.27.

☐ A check in the amount of the fee is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☐ The Director has already been authorized to charge fees in this application to a Deposit Account.

☒ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number **50-2040**. I have enclosed a duplicate copy of this sheet.

**WARNING:** Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

I am the ☐ applicant/inventor.

☐ assignee of record of the entire interest. See 37 CFR 3.71.  
Statement under 37 CFR 3.73(b) is enclosed (Form PTO/SB/96).

☒ attorney or agent of record. Registration Number **40,182**

☐ attorney or agent under 37 CFR 1.34.  
Registration number if acting under 37 CFR 1.34 \_\_\_\_\_

\_\_\_\_\_  
Signature

**JONATHAN SPANGLER**  
Typed or printed name

**MARCH 21, 2005**  
Date

**858-243-0029**  
Telephone Number

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

☐ Total of \_\_\_\_\_ forms are submitted.

This collection of information is required by 37 CFR 1.136(a). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 8 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



PTO/SB/22 (12-04)

Approved for use through 07/31/2006, OMB 0651-0031  
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

<b>PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a)</b> <b>FY 2005</b> <small>(Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4638).)</small>		Docket Number (Optional) <b>059 US2</b>	
Application Number <b>10/812,938</b>		Filed <b>MARCH 29, 2004</b>	
For <b>TISSUE DISCRIMINATION AND APPLICATIONS IN MEDICAL PROCEDURES</b>			
Art Unit <b>3736</b>		Examiner <b>CHARLES ALAN MARMORE II</b>	

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application.

The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):

	Fee	Small Entity Fee	
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<input type="checkbox"/> Two months (37 CFR 1.17(a)(2))	\$450	\$225	\$ _____
<input checked="" type="checkbox"/> Three months (37 CFR 1.17(a)(3))	\$1020	\$510	\$ <b>510.00</b>
<input type="checkbox"/> Four months (37 CFR 1.17(a)(4))	\$1690	\$795	\$ _____
<input type="checkbox"/> Five months (37 CFR 1.17(a)(5))	\$2160	\$1080	\$ _____

☒ Applicant claims small entity status. See 37 CFR 1.27.

☐ A check in the amount of the fee is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☐ The Director has already been authorized to charge fees in this application to a Deposit Account.

☒ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number **50-2040**. I have enclosed a duplicate copy of this sheet.

**WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.**

I am the ☐ applicant/inventor.

☐ assignee of record of the entire interest. See 37 CFR 3.71.  
Statement under 37 CFR 3.73(b) is enclosed (Form PTO/SB/96).

☒ attorney or agent of record. Registration Number **40,182**

☐ attorney or agent under 37 CFR 1.34.  
Registration number if acting under 37 CFR 1.34 \_\_\_\_\_

\_\_\_\_\_  
Signature  
**JONATHAN SPANGLER**  
Typed or printed name

\_\_\_\_\_  
Date  
**MARCH 21, 2005**

\_\_\_\_\_  
Telephone Number  
**858-243-0029**

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

☐ Total of \_\_\_\_\_ forms are submitted.

This collection of information is required by 37 CFR 1.136(a). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 6 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re: Patent Application of	)	
	)	
Michael Hoey et. al.	)	Group Art Unit: 3736
	)	
App. Ser. No. 10/812,938	)	
	)	Examiner: Charles Alan Marmor II
Filed: March 29, 2004	)	
	)	
For: TISSUE DISCRIMINATION	)	
AND APPLICATIONS IN	)	
MEDICAL PROCEDURES	)	
	)	

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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, PO Box 1450, Alexandria VA 22313-1450 on March 21, 2005:

Signature: \_\_\_\_\_

Jay Bell

**RESPONSIVE AMENDMENT**

Mail Stop Amendment  
Commissioner for Patents  
PO Box 1450  
Alexandria VA 22313-1450

Dear Sir:

In response to the office action mailed September 21, 2004, having a shortened statutory period for response which expired December 21, 2004, please amend the above-identified application as follows.

IN THE SPECIFICATION:

*Please replace the section entitled "CROSS-REFERENCES TO RELATED APPLICATIONS" with the following replacement section:*

**CROSS-REFERENCES TO RELATED APPLICATIONS**

The present application is a divisional of commonly owned and co-pending U.S. Patent Application Serial No. 09/860,648 filed May 18, 2001 and issued as U.S. Patent No. 6,760,616 on July 6, 2004, the complete disclosure of which is hereby incorporated herein by reference in its entirety for all purposes. Additionally, the present application claims benefit under 35 U.S.C. § 119(e) from U.S. Provisional Application Serial No. 60/205,634 filed May 18, 2000; and U.S. Provisional Application Serial No. ~~60/243/465~~ 60/243,465 filed October 25, 2000; the entire contents of which are hereby expressly incorporated by reference into this disclosure as if set forth fully herein.

IN THE CLAIMS:

1. (Currently Amended) A method of ~~determining whether a conductive element of a probe is located adjacent to~~ identifying a characterized body tissue located adjacent to a conductive element of a probe comprising the steps of:
  - a) applying an electrical signal to the conductive element;
  - b) determining characteristics of the applied signal, including a phase angle; and
  - c) ~~determining whether the conductive element of a probe is located adjacent to~~ identifying a characterized body tissue located adjacent to the conductive element of a probe based on the phase angle of the applied signal, wherein said characterized body tissue comprises at least one of cortical bone[[,]] and cancellous bone, or cortical bone near the boundary with soft tissue.
2. (Currently Amended) The method of claim 1, wherein the determined characteristics of the applied signal include an impedance of the signal through the tissue.
3. (Previously Presented) The method of claim 1, wherein the probe comprises one of a cannula and a cathode.
4. (Previously Presented) The method of claim 1, wherein step a) applies signals having a range of predetermined frequencies to the conductive element.

5. (Currently Amended) The method of claim 1, wherein step c) includes ~~determining whether the conductive element of a probe is located adjacent to said tissue~~ identifying the characterized body tissue located adjacent to the conductive element of said probe based on the determined characteristics and frequency of the resulting signal.
6. (Previously Presented) The method of claim 1, wherein the conductive element is an electrode.
7. (Previously Presented) The method of claim 1, wherein the conductive element includes a pair of electrodes and the signal is passed between said electrodes.
8. (Previously Presented) The method of claim 1, wherein the signal is an electrical signal having a sliding frequency.
9. (Currently Amended) An article of manufacture for use in ~~determining whether a conductive element of a probe is located adjacent to~~ identifying a characterized body tissue located adjacent to a conductive element of a probe, the article of manufacture comprising computer readable storage media including program logic embedded therein that causes control circuitry to perform the steps of:
  - a) applying a signal to the conductive element;
  - b) determining characteristics of the applied signal, including a phase angle;
  - and

- c) ~~determining whether the conductive element of a probe is located adjacent to~~ identifying a characterized body tissue located adjacent to the  
conductive element of a probe based on the phase angle of the applied  
signal, wherein said characterized body tissue comprises at least one of  
cortical bone[,]and cancellous bone, ~~or cortical bone near the boundary~~  
~~with soft tissue.~~
10. (Currently Amended) The article of manufacture of claim 9, wherein the  
determined characteristics of the applied signal further include an impedance of  
the signal through the tissue.
11. (Previously Presented) The article of manufacture of claim 9, wherein the probe  
comprises one of a cannula and a cathode.
12. (Previously Presented) The article of manufacture of claim 9, wherein step a)  
applies signals having a range of predetermined frequencies to the conductive  
element.
13. (Currently Amended) The article of manufacture of claim 9, wherein step c)  
includes ~~determining whether the conductive element of a probe is located~~  
~~adjacent to said tissue~~ identifying the characterized body tissue located adjacent to  
the conductive element of said probe based on the determined characteristics and  
frequency of the resulting signal.

14. (Previously Presented) The article of manufacture of claim 9, wherein the conductive element is an electrode.
15. (Previously Presented) The article of manufacture of claim 9, wherein the conductive element includes a pair of electrodes and the signal is passed between said electrodes.
16. (Previously Presented) The article of manufacture of claim 9, wherein the signal is an electrical signal having a sliding frequency.
17. (Currently Amended) An apparatus for use in ~~determining whether a conductive element of a probe is located adjacent to~~ identifying a characterized body tissue located adjacent to a conductive element of a probe, the apparatus including:
  - a) means for applying a signal to the conductive element;
  - b) means for determining characteristics of the applied signal, including a phase angle of the signal; and
  - c) means for ~~determining whether the conductive element of a probe is located adjacent to~~ identifying a characterized body tissue located adjacent to the conductive element of a probe based on the phase angle of the applied signal, wherein said characterized body tissue comprises at least one of cortical bone~~[[,]]~~ and cancellous bone, ~~or cortical bone near the boundary with soft tissue.~~

18. (Currently Amended) The apparatus of claim 17, wherein the determined characteristics of the applied signal include an impedance of the signal through the tissue.
19. (Previously Presented) The apparatus of claim 17, wherein the probe comprises one of a cannula and a cathode.
20. (Previously Presented) The apparatus of claim 17, wherein means for applying a signal includes means for applying signals having a range of predetermined frequencies to the conductive element.
21. (Currently Amended) The apparatus of claim 17, wherein the means for ~~determining whether the conductive element of a probe is located adjacent to said tissue~~ identifying said tissue located adjacent to the conductive element of said probe includes means for determining whether the conductive element of a probe is located adjacent to said tissue based on the determined characteristics and frequency of the signal.
22. (Previously Presented) The apparatus of claim 17, wherein the conductive element is an electrode.



23. (Previously Presented) The apparatus of claim 17, wherein the conductive element includes a pair of electrodes and the signal is passed between said electrodes.
24. (Previously Presented) The apparatus of claim 17, wherein the signal is an electrical signal having a sliding frequency.

**REMARKS**

Claims 1-24 are currently pending in this application. In the Office Action mailed September 21, 2004 (the "Office Action"), claims 1-24 were rejected and claims 1, 2, 9, 10, 17 and 18 were objected to for various informalities. In response, claims 1-2, 5, 9-10, 13, 17-18 and 21 have been amended herewith. Applicants respectfully request favorable consideration of the present application in light of the amendments to the claims and specification, and the following remarks.

**I. Oath/Declaration**

In paragraph 1 of the Office Action, the declaration was deemed to be defective because it did not identify the city and either state or foreign country of residence of each inventor. The Office Action correctly states that a copy of the Declaration for Utility or Design Application Using an Application Data Sheet (37 CFR 1.76) that was originally submitted with parent application U.S. Serial No. 09/860,648 was filed with the present application on March 29, 2004, and further states that no copy of an Application Data Sheet is in the file. The parent file did include a sheet containing "Inventor Information" including each inventor's name, postal address, and citizenship, as well as "Correspondence Information," "Application Information," and "Continuity Information." This sheet was inadvertently omitted with the copy of the declaration originally submitted in the present application. Applicants have resubmitted the copy of the original declaration as submitted with the parent application along with the copy of

the inventor information sheet that was also submitted with the original application, and further believe that this action should rectify the defect in the declaration.

## **II. Specification**

In paragraph 2 of the Office Action, the disclosure was objected to for several informalities. Applicants have revised the section entitled "CROSS-REFERENCES TO RELATED APPLICATIONS" in order to correct these informalities. In particular, Applicants have added "and issued as U.S. Patent No. 6,760,616 on July 6, 2004" after "May 18, 2001" in order to correctly reflect the current status of the parent application. Furthermore, Applicants have replaced "60/243/465" with "60/243,465" in accordance with the Office Action. The remainder of the specification has been reviewed and no other errors are believed to exist. No new matter has been added.

## **III. Claim Objections**

In paragraphs 4-9 of the Office Action, claims 1, 2, 9, 10, 17 and 18, respectively, were objected to because of several informalities. Claims 1, 2, 9, 10, 17 and 18 have been amended to correct these informalities, and applicants respectfully assert that these claim objections should be withdrawn as moot.

## **IV. Claim Rejections – 35 USC § 102**

Claims 1-24 were rejected by the Office Action under 35 USC § 102(b) as being anticipated by U.S. Pat. No. 5,759,159 to Masreliez ("Masreliez"). Applicant respectfully traverses this rejection as set forth below.

In order for a reference to anticipate the present claimed invention under 35 USC 102(b), it must be shown that each and every element of the claim can be found in the reference. If it can be shown that one element of the claim is missing or not met by the cited reference, the rejection must be withdrawn as inappropriate.

Claim 1, as amended, recites a method of *identifying a characterized body tissue located adjacent to a conductive element of a probe* comprising the steps of (a) applying an electrical signal to the conductive element; (b) determining characteristics of the applied signal, including a phase angle; and (c) identifying a characterized body tissue located adjacent to the conductive element of a probe based on the phase angle of the applied signal, wherein said characterized body tissue comprises at least one of cortical bone and cancellous bone.

Claim 9, as amended, recites an article of manufacture for use in *identifying a characterized body tissue located adjacent to a conductive element of a probe*, the article of manufacture comprising computer readable storage media including program logic embedded therein that causes control circuitry to perform the steps of (a) applying an electrical signal to the conductive element; (b) determining characteristics of the applied signal, including a phase angle; and (c) identifying a characterized body tissue located adjacent to the conductive element of a probe based on the phase angle of the applied signal, wherein said characterized body tissue comprises at least one of cortical bone and cancellous bone.

Claim 17, as amended, recites an apparatus for use in *identifying a characterized body tissue located adjacent to a conductive element of a probe*, the apparatus including (a) means for applying a signal to the conductive element; (b) means for determining characteristics of the signal, including a phase angle of the signal; and (c) means for identifying a characterized body tissue located adjacent to the conductive element of a probe based on the phase angle of the applied signal, wherein said characterized body tissue comprises at least one of cortical bone and cancellous bone.

The Masreliez reference appears to be silent with regard to at least one element found in amended Claims 1, 9 and 17 of the claimed invention. Among other voids, the Masreliez reference does not disclose the element of Claims 1, 9 and 17 involving *identifying a characterized body tissue located adjacent to a conductive element of a probe*. The Masreliez reference appears to be concerned only with finding the apex of a root canal, particularly where the root canal ends and the patient's tissue begins (*col. 1, lines 23-25*). Notably, the apparatus and method in the Masreliez reference is focused on detecting changes in the node voltage  $V_p(f_i)$  produced by the probe current  $I_p(f_i)$ , including phase angles  $\phi_1-\phi_5$  and amplitudes  $A_1-A_5$  which signal that the distal end of the probe is approaching body tissue (*col. 3 line 57 – col. 4, line 10*). The Masreliez reference neither teaches nor suggests identifying the type of body tissue that the probe may encounter. Rather, the Masreliez reference relies on the difference in impedance  $Z$  between the root canal (i.e. enamel) and body tissue (*col. 3, line 66 – col. 4, line 5, and*

*col. 5, lines 20-25*) to determine the location of the probe relative to body tissue in general.

Because the Masreliez reference is silent to at least one element of amended Claims 1, 9 and 17, it is respectfully requested that the rejection of Claims 1-24 in the Office Action be withdrawn. Claims 1, 9 and 17 are believed to be in proper condition for allowance and an indication of such is hereby earnestly solicited. Claims 2-8, 10-16, and 18-24, being dependent upon and further limiting independent Claims 1, 9 and 17, should be deemed allowable for the reasons set forth in support of the allowability of Claims 1, 9 and 17, as well as the additional features they contain.

**V. Double Patenting**

Claims 1-24 were rejected by the Office Action under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-24 of U.S. Patent No. 6,760,616. In response to this rejection, Applicants are willing to timely file a terminal disclaimer in compliance with 37 CFR 1.321(c) upon condition of allowance.

PATENT

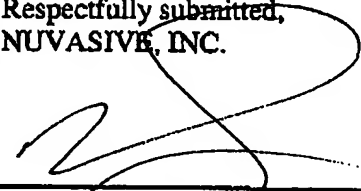
Application Serial No. 10/812,038

Attorney Ref. No. 059US2

CONCLUSION

The foregoing amendment has been submitted to place the present application in condition for allowance. Favorable reconsideration and allowance of the claims in this application is respectfully requested. Furthermore, Applicant hereby authorizes a payment of \$510.00 fee for the Petition for Extension of Time for 3 months. No other fees are deemed necessary at this time. However, in the event that there are any additional fees to be charged or payments to be credited, the applicant hereby request that any charges or credits be made to Deposit Account No.: 50-2040 for Customer No.: 30,328. In the event that there are any questions concerning this Amendment or the application in general, the Examiner is cordially invited to telephone the undersigned attorney so that prosecution may be expedited.

Respectfully submitted,  
NUVASIVE, INC.

By:   
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Registration No. 40,182

4545 Towne Centre Court  
San Diego, CA 92121  
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Date: March 21, 2005

Attorney Docket No.: 18808004910  
Client Ref. No.:

NO. 949 P. 3

201

PTO/SBARA (10-00)

Approved for use through 10/31/2002. OMB 0551-0032  
U.S. Patent and Trademark Office U.S. DEPARTMENT OF COMMERCE  
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# DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

As the below named inventor(s), I/we declare that:

This declaration is directed to:

- ☐ The attached application, or  
☒ Application No. 09/860,648, filed on May 18, 2001,  
☐ as amended on \_\_\_\_\_ (if applicable);

I/we believe that I/we am/are the original and first inventor(s) of the subject matter which is claimed and for which a patent is sought;

I/ we have reviewed and understand the contents of the above-identified application, including the claims, as amended by any amendment specifically referred to above;

I/we acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me/us to be material to patentability as defined in 37 CFR 1.56, including material information which became available between the filing date of the prior application and the National or PCT International filing date of the continuation-in-part application, if applicable; and

All statements made herein of my/own knowledge are true, all statements made herein on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001, and may jeopardize the validity of the application or any patent issuing thereon.

THIS COPY OF THIS  
DECLARATION IS  
INTENDED FOR  
SUBMISSION WITH THE  
APPLICATION ATTACHED  
HEREWITH.  
(ATT REF No. 059US2)

## FULL NAME OF INVENTOR(S)

Inventor one MICHAEL ROEY Date: 6/25/01  
Signature: [Signature] Citizen of: US

Inventor two CORBETT W. STONE Date: 18 June 2001  
Signature: [Signature] Citizen of: US

Inventor three KEVIN EGLEY Date: 7/1/01  
Signature: [Signature] Citizen of: US

Inventor four \_\_\_\_\_ Date: \_\_\_\_\_  
Signature: \_\_\_\_\_ Citizen of: \_\_\_\_\_

☐ Additional inventors are being named on \_\_\_\_\_ additional form(s) attached hereto.

Burden Hour Statement: This collection of information is required by 35 U.S.C. 116 and 37 CFR 1.63. The information is used by the public to file (and the PTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This form is estimated to take 1 minute to complete. This time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for



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**Correspondence Information**

Correspondence Customer Number:: 20350

**Application Information**

Title Line One::	TISSUE DISCRIMINATION AND
Title Line Two::	APPLICATIONS IN MEDICAL PROCEDURES
Total Drawing Sheets::	3
Formal Drawings?::	Yes
Application Type::	Utility
Docket Number::	18608004910
Secrecy Order in Patent Appl.?::	No

**Continuity Information**

This application is a::	NonProvisional
> Application One::	60/205,634
Filing Date::	May 18, 2000
Patent Number::	

which is a::	
>>Application Two::	60/243,465
Filing Date::	October 25, 2000
Patent Number::	



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**PETITION FOR REVIVAL OF AN APPLICATION FOR PATENT  
ABANDONED UNINTENTIONALLY UNDER 37 CFR 1.137(b)**Docket Number (Optional)  
059US2

First named inventor: Michael F. Hoey

Application No.: 10/812,038

Art Unit: 3736

Filed: March 29, 2004

Examiner: Charles A. Marmor, II

Title: Tissue Discrimination and Applications in Medical Procedures

Attention: Office of Petitions

**Mail Stop Petition**

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

FAX (571) 273-8300

NOTE: If information or assistance is needed in completing this form, please contact Petitions  
Information at (571) 272-3282.

The above-identified application became abandoned for failure to file a timely and proper reply to a notice or  
action by the United States Patent and Trademark Office. The date of abandonment is the day after the expiration  
date of the period set for reply in the office notice or action plus an extensions of time actually obtained.

**APPLICANT HEREBY PETITIONS FOR REVIVAL OF THIS APPLICATION**

NOTE: A grantable petition requires the following items:

- (1) Petition fee;
- (2) Reply and/or issue fee;
- (3) Terminal disclaimer with disclaimer fee - required for all utility and plant applications  
filed before June 8, 1995; and for all design applications; and
- (4) Statement that the entire delay was unintentional.

**1. Petition fee**☒ Small entity-fee \$ 750.00 (37 CFR 1.17(m)). Applicant claims small entity status. See 37 CFR 1.27.☐ Other than small entity - fee \$ \_\_\_\_\_ (37 CFR 1.17(m))**2. Reply and/or fee**

A. The reply and/or fee to the above-noted Office action in  
the form of Responsive Amendment **ORIGINALLY MAILED** **MARCH 21, 2005** (identify type of reply):

☐ has been filed previously on \_\_\_\_\_.

☒ is enclosed herewith.

B. The issue fee and publication fee (if applicable) of \$ \_\_\_\_\_.

☐ has been paid previously on \_\_\_\_\_.

☐ is enclosed herewith.

[Page 1 of 2]

This collection of information is required by 37 CFR 1.137(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Mail Stop Petition, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

## 3. Terminal disclaimer with disclaimer fee

- ☒ Since this utility/plant application was filed on or after June 8, 1995, no terminal disclaimer is required.
- ☐ A terminal disclaimer (and disclaimer fee (37 CFR 1.20(d)) of \$ \_\_\_\_\_ for a small entity or \$ \_\_\_\_\_ for other than a small entity) disclaiming the required period of time is enclosed herewith (see PTO/SB/63).

4. STATEMENT: The entire delay in filing the required reply from the due date for the required reply until the filing of a grantable petition under 37 CFR 1.137(b) was unintentional. [NOTE: The United States Patent and Trademark Office may require additional information if there is a question as to whether either the abandonment or the delay in filing a petition under 37 CFR 1.137(b) was unintentional (MPEP 711.03(c), subsections (III)(C) and (D)).]

**WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.**

_____ Signature	_____ August 3, 2005 Date
_____ Jonathan Spangler, Esq. Typed or printed name	_____ 40,182 Registration Number, if applicable
_____ 4545 Towne Centre Court Address	_____ 858-243-0029 Telephone Number
_____ San Diego, CA 92121 Address	

- Enclosures: ☐ Fee Payment
- ☒ Reply
- ☐ Terminal Disclaimer Form
- ☐ Additional sheets containing statements establishing unintentional delay
- ☒ Other: Return Receipt Postcard

## CERTIFICATE OF MAILING OR TRANSMISSION [37 CFR 1.8(a)]

I hereby certify that this correspondence is being:

- ☒ Deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to: Mail Stop Petition, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450.
- ☐ Transmitted by facsimile on the date shown below to the United States Patent and Trademark Office as (571) 273-8300.

\_\_\_\_\_  
August 3, 2005  
Date

\_\_\_\_\_  
Signature  
\_\_\_\_\_  
Jonathan Spangler  
Typed or printed name of person signing certificate